



November 8, 2021

via ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: EX PARTE PRESENTATION
WC Docket No. 18-89 – *Protecting Against National Security Threats to the Communications Supply Chain Through FCC Programs;*
WT Docket No. 21-195 – *WTB Seeks Comment on the Impact of the Global Semiconductor Shortage on the U.S. Communications Sector*

Dear Ms. Dortch:

On November 4, 2021, the Rural Wireless Association, Inc. ("RWA") filed comments with the U.S. Department of Commerce, pursuant to a request for public information ("RFI") prompted by President Biden's *America's Supply Chains* February 2021 Executive Order.¹ The Department of Commerce's RFI solicits public input on supply chain critical goods and materials.

RWA has attached its Department of Commerce RFI comments for the Federal Communications Commission's ("FCC," "Commission") consideration in the above-captioned dockets.

RWA's comments in the Department of Commerce proceeding specifically draw focus to the present semiconductor and telecom workforce shortage, and the effects that those shortages will have on small and rural carriers' efforts to comply with the Commission's efforts to remove unsecure equipment from U.S. wireless networks via the Supply Chain Reimbursement Program.

RWA hopes that the Commission works with its Commerce and Homeland Security agency partners, to allow Supply Chain Reimbursement Program ("Program") Participants to fully

¹ See Notice of Request for Public Comments on Risks in the Information Communications Technology Supply Chain, 86 Fed. Reg. 52127 (Sep. 20, 2021) (ICT Comment Request); *America's Supply Chains*, Exec. Order No. 14017, 86 Fed. Reg. 11849 (Mar. 1, 2021). The Supply Chain Executive Order directs "the Secretary of Commerce and the Secretary of Homeland Security, in consultation with the heads of appropriate agencies, to submit, within one year of the date of E.O. 14017, a report on supply chains for critical sectors and subsectors of the information and communications technology (ICT) industrial base (as determined by the Secretary of Commerce and the Secretary of Homeland Security), including the industrial base for the development of ICT software, data, and associated services." ICT Comment Request, 86 Fed. Reg. at 52127-28.

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remove Covered List equipment, by lobbying Congress to fully fund the cost of the Program should there not be enough funding to cover the rising costs associated with the supply chain and labor shortages coupled with the short time line for completing the Reimbursement Program.

Alternatively, RWA asks that the Commission issue general extensions to the one-year reimbursement and replacement term to give participants more time, which will in turn lower costs and allow the semiconductor and workforce shortages to be resolved.

Respectfully submitted,

/s/ Carri Bennet

Carri Bennet, General Counsel
Alex Espinoza, Regulatory Counsel
Stephen Sharbaugh, Legislative and Policy Analyst
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 857-4519
legal@ruralwireless.org

cc: Justin Faulb
Paul Powell
Jon Markman

Attachment (1)

**Before the
U.S. DEPARTMENT OF COMMERCE
Washington, DC**

In the Matter of)	Docket No. 2021-0021
)	
Notice of Request for Public Comments on Risks)	
in the Information Communications Technology)	
Supply Chain)	
)	
Information and Communications Technology)	
Supply Chain)	
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COMMENTS OF RURAL WIRELESS ASSOCIATION, INC.

The Rural Wireless Association (“RWA”)¹ submits these comments in response to the Department of Commerce’s Bureau of Industry and Security (“BIS”) request for comment on the risks present in the information and communications technology (“ICT”) supply chain. BIS seeks these comments in order to compile a report to Congress, mandated by President Biden’s Executive Order 14017,² which identifies “risks in the semiconductor manufacturing and advanced packaging supply chains and [provides] policy recommendations to address these risks.”³

In response to the public outreach by BIS, RWA eagerly offers comments on two topics of particular interest to BIS: (1) availability of substitutes or alternative sources for critical and

¹ RWA is a 501(c)(6) trade association dedicated to promoting wireless opportunities for rural telecommunications companies who serve consumers who, reside, work, or travel in rural America. RWA’s members are small businesses serving or seeking to serve secondary, tertiary, and rural markets. Each of RWA’s member companies serves fewer than 100,000 subscribers.

² Executive Order 14017, 86 FR 11849, Feb. 24, 2021.

³ *Id.*, at Sec. 3(b)(i).

essential goods and materials; and (2) relevant workforce skills and gaps in availability and training resources to fulfill necessary future workforce needs. These topics touch upon two areas of major concern for RWA, particularly for RWA members that are seeking reimbursement for replacing Huawei and ZTE equipment through the Federal Communications Commission's ("FCC" or "Commission") Reimbursenent Program,⁴ namely: (1) the semiconductor shortage;⁵ and (2) the trained-workforce shortage.⁶

I. The Semiconductor Chip Shortage Has Drastically Delayed Efforts by Small and Rural Carriers to Further Build Out 4G LTE and Transition to 5G Services and Complicated Compliance with FCC Programs.

RWA is very concerned that the current semiconductor chips shortage will continue to cause significant delays to small rural carriers continuing to build out 4G LTE and those transitioning to 5G services. The shortage of semiconductor chips means manufacturers cannot produce quickly enough the communications equipment needed to meet consumer needs for 4G LTE and 5G wireless broadband. To date, large carriers have been insulated from the adverse effects of supply shortages due to their bargaining power and longer 5G lead times.⁷ RWA's small rural carriers, who are still expanding 4G LTE and just beginning to focus on 5G purchases, are learning that 5G equipment is less frequently available on customary purchase and

⁴ *Protecting Against National Security Threats to the Communications Supply Chain Through FCC Programs*, WC Docket No. 18-89, Second Report and Order, 35 FCC Rcd 14284, 14374-83, Appx. A (2020); Secure and Trusted Communications Networks Act of 2019, Pub. L. No. 116-124, 133 Stat. 158 (2020) (codified as amended at 47 U.S.C. §§ 1601-1609) (Secure Networks Act).

⁵ Swanson, Ana, "Global Chip Shortage Challenges Biden's Hope for Manufacturing Revival," *New York Times* (Feb. 18, 2021), <https://www.nytimes.com/2021/02/18/business/economy/chip-shortage-semiconductors-manufacturing-biden.html>; See also *WTB Seeks Comment on the Impact of the Global Semiconductor Shortage on the U.S. Communications Sector*, Public Notice, WT Docket No. 21-195, DA 21-550 (May 2021).

⁶ Sabin, Sam, "5G Worker Shortages Could Provide Many Americans With Chance to Return to Work," *Morning Consult* (May 6, 2020), <https://morningconsult.com/2020/05/06/5g-wireless-workforce-shortage-coronavirus/>.

⁷ See, e.g., Mike Dano, Counting the cost: How chip shortages are affecting telecom companies, *Light Reading* (May 5, 2021), <https://www.lightreading.com/opticalip/counting-cost-how-chip-shortages-are-affecting-telecomcompanies/d/d-id/769289>.

delivery timelines. Intel has reported that semiconductor shortages “could last *several* years.”⁸ Recently, Ford Motor Company Chief Financial Officer John Lawler estimated that the chip shortage could extend into 2023.⁹ Additionally, Widelity noted in Section 13.4 (“Chipset Availability”) of its draft Report to the Commission that there is a scarcity of semiconductor chips and other electronic components that make up radio and computer equipment.¹⁰ Widelity concluded that “[c]hipsets are foundational to all deployments and any interruption to the equipment supply chain could negatively impact the timing of the deployments.”¹¹ Congress has also recognized this shortfall and the delays that will be caused across several technology sectors and has attempted to address the shortage by passing the CHIPS Act,¹² which, among other initiatives, creates a \$10 billion federal program that matches state and local incentives offered for building semiconductor foundry facilities with advanced manufacturing capabilities.

The semiconductor chip shortage has been exacerbated by significant shipping delays. Shipping delays have come in two forms: (1) a backlog of container ships at many US ports;¹³ and (2) a shortage of steel shipping containers.¹⁴ It was reported that approximately 200,000 shipping containers remained on ships off the coast of Los Angeles, just to name one U.S. port affected by this situation.¹⁵ One of the main causes of the ship backlog has been a shortage of

⁸ “Intel reiterates chip supply shortages could last several years,” Reuters.com (May 31, 2021, 12:47 AM), <https://www.reuters.com/technology/intel-reiterates-chip-supply-shortages-could-last-several-years-2021-05-31/> (emphasis added).

⁹ Wayland, Michael, “Ford shatters Wall Street’s earnings expectations, raises guidance for the year on new vehicle demand,” CNBC (Oct. 27, 2021), <https://www.cnbc.com/2021/10/27/ford-f-earnings-q3-2021.html>.

¹⁰ Widelity, Report: Supply Chain Reimbursement Program Study (2021) (“Report”).

¹¹ *Id.*, at 33.

¹² William M. Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. 116-283, 134 Stat. 3388, Sec. 9901-9908 (Jan. 1, 2021) (The CHIPS Act authorizes federal incentives to promote semiconductor manufacturing and research initiatives over the next decade).

¹³ Meeks, Alexandra, et al., “North America’s biggest container port faces record backlog,” CNN Business (Oct. 19, 2021), <https://www.cnn.com/2021/10/18/business/container-port-record-backlog/index.html>.

¹⁴ Pezzone, Jimmy, “Shipping delays and supply chain woes impacting this year’s holiday shopping,” Techspot (Sept. 25, 2021), <https://www.techspot.com/news/91428-shipping-delays-supply-chain-woes-impacting-year-holiday.html>.

¹⁵ Meeks, *supra*.

truck drivers to pick up the shipping containers and transport them from the port to their destination.¹⁶ One cause of the shipping container shortage was that the pandemic resulted in the cancellation of shipments along trade routes which caused many shipping containers to be stranded and unavailable.¹⁷ Now despite a spike in demand to replenish inventories around the globe, the supply of shipping containers lags significantly behind demand.¹⁸ Both the semiconductor chip shortage and shipping delays have played a significant role in stalling rural 4G LTE build out and 5G transition plans.

These delays also impact the ability of RWA members who receive legacy Universal Service Fund (“USF”) support from being able to spend the legacy USF support on 5G as required by the Commission’s October 2020 5G Rural Fund Order.¹⁹ That order requires eligible telecommunications carriers (“ETCs”) to use one-third of received monthly support by December 31, 2021; two-thirds by December 31, 2022; and all received monthly support “in 2023 and thereafter.”²⁰ While the 5G Rural Fund does provide for “support usage flexibility” in the event an ETC is unable to meet its year one support usage requirement,²¹ the ability to proportionally shift 2021 funds to 2022 is not particularly helpful given the semiconductor shortage or its projected length that limits the ability of rural carriers to purchase 5G equipment.

This semiconductor shortage also affects small and rural carrier compliance with the Commission’s Secure and Trusted Communications Networks Reimbursement Program (“Reimbursement Program”). Reimbursement Program recipients are required to complete the

¹⁶ *Id.*

¹⁷ Pezzone, *supra*.

¹⁸ *Id.*

¹⁹ *Establishing a 5G Fund for Rural America*, Report and Order, 35 FCC Rcd 12174, 12286, Appx A. (2020) (new section 47 CFR § 54.322 (c)(1)-(3)).

²⁰ *Id.*

²¹ *Id.*, at 12286, Appx. A (new section 47 CFR § 54.322 (c)(4)).

removal, replacement, and disposal of their covered equipment within one-year of receiving their initial disbursement of funds.²² Although the Commission is permitted to grant a six-month blanket extension to all recipients if the Commission “finds that the supply of replacement communications equipment or services needed by the recipients to achieve the purposes of the Program is inadequate to meet the needs of the recipients,”²³ RWA believes that one six-month blanket extension will be insufficient for recipients to meet their deadlines, given the semiconductor shortage. Accordingly, because the semiconductor shortage is predicted to last longer than six months, it is imperative that both BIS and the Commission not only acknowledge that a supply chain shortage issue exists, but take action to aid small and rural carriers through this global disaster so that they can continue to serve their rural customers who are dependent on connectivity.

II. The Trained-Workforce Shortage Will Similarly Delay Build Out of 4G LTE Networks and the Transition to 5G Networks and Leave Many Small Rural Carriers Struggling to Meet Federal Directives.

There are significant shortages of available trained workers due to the pandemic and a lack of training programs. Carriers, especially small rural carriers, are having difficulty finding available crews to install their equipment. The installation of radio antennas and base units at the tower location requires specific skill sets and the installation of the core requires different skill sets. Migration from one network to another requires yet another skill set as does network optimization and commissioning the network from test phase to commercial operation.

²² 47 U.S.C. § 1603 (d)(6)(A).

²³ *Id.* § 1603 (d)(6)(B).

Especially in rural areas, the work force is not readily available²⁴ and each rural operator will be competing with potentially forty or more other rural operators to engage with the available labor pool during the 2022 – 2023 upcoming time period established for the replacement of Huawei and ZTE equipment.²⁵ In a recent survey conducted by NATE: The Communications Infrastructure Contractors Association,²⁶ 68 percent of respondent NATE member companies stated that their *most* common challenge is the lack of available workers and 59 percent stated that their *second most* common challenge is recruiting skilled workers.²⁷ The Nate Survey also found that there is a need for over 6,000 tower technicians, in addition to other technicians, engineers, and administrative staff.²⁸

The labor pool that is available is being heavily utilized by the three nationwide carriers and DISH who are in a race to build out their respective 5G networks. Priority is being given to these carriers due to orders already being placed and services already contracted. Congress has recognized the need for job training programs to provide skilled labor to take on these jobs.²⁹ Even if these programs are adopted to assist the growth of the workforce, their effects will not be felt for years to come and with the Senate passage of the *Infrastructure Investment and Jobs Act*,

²⁴ Casselman, Ben. “Rural Areas Are Looking for Workers. They Need Broadband to Get Them,” New York Times (May 17, 2021). <https://www.nytimes.com/2021/05/17/business/infrastructure-ruralbroadband.html?referringSource=articleShare>.

²⁵ *Wireline Competition Bureau and Office of Economics and Analytics Release Results from Supply Chain Security Information Collection*, WC Docket No. 18-89, Public Notice, DA 20-1037 (Sep. 4, 2020) (ETCs were required to report whether they owned or used Huawei or ZTE equipment or services in their networks. ETCs that reported in the affirmative were listed in the Public Notice.).

²⁶ NATE is a non-profit trade association dedicated to providing a unified voice for tower and communications infrastructure, service, and maintenance companies.

²⁷ “2020 Workforce Survey Results,” NATE: The Communications Infrastructure Contractors Association, Survey Report (Nov. 19, 2020) (“NATE Survey”) <https://natehome.com/workforce-development/2020-workforce-survey-results/>.

²⁸ *Id.*

²⁹ *See generally*, *Telecommunications Skilled Workforce Act*, S. 163, 117th Cong. (Feb. 2, 2021) and H.R. 1032, 117th Cong. (Feb. 11, 2021) (Requires FCC to establish interagency working group to develop recommendations on telecommunications workforce needs); *Improving Minority Participation And Careers in Telecommunications Act* (“IMPACT Act”), S. 996, 117th Cong. (Mar. 25, 2021) (Grants would be awarded to certain institutions of higher education to train students for telecommunications workforce).

which would allocate \$65 billion for broadband related-projects, there is expected to be even more pressure on the limited workforce.³⁰ Rural providers need a solution now. Therefore it is especially important for BIS to make these concerns known to Congress so that appropriate decisions can be made to alleviate this trained-workforce issue.

III. Conclusion

RWA thanks BIS for the opportunity to shed some light on the difficulties that many small rural providers are experiencing when it comes to the semiconductor and trained-workforce shortages. RWA hopes that BIS will highlight these many concerns that are affecting the telecommunications supply chain and harming rural Americans. Connectivity is key for our future. Therefore, it is imperative that rural Americans are not left behind in the continued build out of 4G LTE and the transition to 5G and future generation services.

Respectfully submitted,

RURAL WIRELESS ASSOCIATION, INC.

By: */s/ Carri Bennet*

Carri Bennet, General Counsel
Stephen Sharbaugh, Legislative and Policy Analyst
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 857-4519
legal@ruralwireless.org

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³⁰ See *Infrastructure Investment and Jobs Act*, H.R. 3684, 117th Cong. (March 31, 2021) (Notably directs \$42.45 billion for the Broadband Equity, Access, and Deployment Program, \$1 billion in funding for middle mile projects and \$2.75 billion for digital equity programs.).